

Claims

1. A resin composition comprising:

(A) 70 to 99 parts by weight of a polyphenylene ether resin, and

(B) 1 to 30 parts by weight of a liquid-crystal polyester,

5 wherein the polyphenylene ether resin in the composition contains 10 to 30 wt.% of polymer having a molecular weight of 20,000 or less and has a molecular weight distribution (Mw/Mn) of 1.8 to 3.5.

10 2. The resin composition according to claim 1, wherein the polyphenylene ether resin contains 10 to 25 wt.% of polymer having a molecular weight of 20,000 or less, and has a molecular weight distribution (Mw/Mn) of 2.0 to 3.0.

15 3. The resin composition according to claim 1, further comprising:

(C) 0.1 to 10 parts by weight of a compound containing a monovalent, divalent, trivalent or tetravalent metal element based on 100 parts by weight, in total, of components (A) and (B).

20

4. The resin composition according to claim 3, wherein the monovalent, divalent, trivalent or tetravalent metal element is at least one element selected from the group consisting of Zn, Mg, Ti, Sn, Sb, Al and Ge.

25

5. The resin composition according to claim 3, wherein component (C) is at least one compound selected from the group consisting of ZnO, zinc acetate, zinc stearate, Mg(OH)₂, tetrabutoxide titanate and tetraisopropoxy titanate.

10086852 . 060302
20250910 2588001
6. The resin composition according to any one of claims 3 to 5, wherein the composition has a morphology comprising a continuous phase and a disperse phase, in which the abundance ratio (R) of Zn and/or Mg in the disperse phase obtained by TEM-EDX is 0.0005 or more and a requirement of $R_d > R_m$ when $R_m = 0$ or $150R_m > R_d > R_m$ when $R_m \neq 0$ (wherein the abundance ratio (R) of Zn and/or Mg = (the number of L α -rays of Zn and/or Mg)/(the number of K α -rays of C), R_d represents R in the disperse phase, and R_m represents R in the continuous phase) is satisfied.

7. The resin composition according to any one of claims 1 to 5, further comprising:

(D) 0.05 to 30 parts by weight of a vinyl compound elastomer based on 100 parts by weight, in total, of components (A) and (B).

8. The resin composition according to claim 7, wherein component (D) is functionalized with an acid anhydride group.

9. The resin composition according to any one of claims 1 to 5, further comprising:

(E) 0.1 to 10 parts by weight of a flame retardant based on 100 parts by weight, in total, of components (A) and (B).

10. The resin composition according to claim 9, wherein component (E) is (F) a silicon compound.

11. The resin composition according to claim 10, wherein component (F) is a silicone.

12. The resin composition according to claim 10, wherein component (F) is a polyhedral oligomeric silsesquioxane or partially opened polyhedral oligomeric silsesquioxane.

5

13. The resin composition according to claim 10, wherein component (F) is a silica.

14. The resin composition according to any one of claims 10 to 13, further comprising:

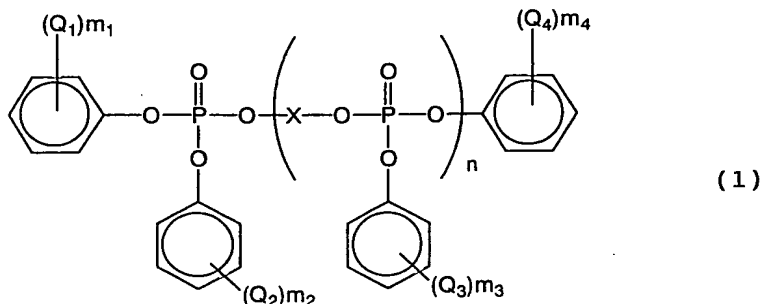
(G) a cyclic nitrogen compound, wherein the weight ratio (f/g) of component (F) to component (G) is 0.1 to 10.

15. The resin composition according to claim 14, wherein component (G) is a melamine, melem or mellon.

16. The resin composition according to claim 9, wherein component (E) is a phosphorus flame retardant.

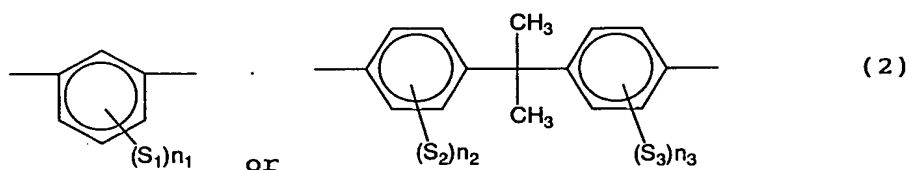
20

17. The resin composition according to claim 16, wherein the phosphorus flame retardant has the following structure (1):



wherein Q_1 , Q_2 , Q_3 and Q_4 each independently represents an alkyl group having 1 to 6 carbon atoms or a hydrogen atom; n represents an integer of 1 or more; m_1 , m_2 , m_3 and m_4 each independently represents an integer of 0 to 3; and X is selected from formula

(2):



wherein S_1 , S_2 and S_3 each independently represents a methyl group or a hydrogen atom; and n_1 , n_2 and n_3 each independently represents an integer of 0 to 2.

18. A molded article obtained by molding the resin composition according to any one of claims 1 to 5, 8 and 10 to 17.

19. The molded article according to claim 18, wherein the molded article is a heat resistant part for automobiles or office machines.

20. The molded article according to claim 18, wherein the molded article is a sheet.

21. A method for producing the composition according to claim 1 or 2 comprising:

providing a twin-screw extruder, and
melt-kneading a resin with the twin-screw extruder set at a screw

rotation speed (N) of 200 to 600 rpm, heat exposure (α) of 50 or less and a temperature of the resin extruded from a die of 310 to 380°C (wherein heat exposure (α) = $D^3 \times N/Q \times 10^{-4}$; D (mm)=diameter of the screw of the twin-screw extruder; N (rpm)=screw rotation speed; and Q (kg/hr)=extrusion rate of the resin from the extruder).

22. A resin composition comprising:

- (A) 70 to 99 parts by weight of a polyphenylene ether resin,
- 10 (B) 1 to 30 parts by weight of a liquid-crystal polyester, and
0.1 to 10 parts by weight of Zn and/or Mg based on 100 parts by weight, in total, of components (A) and (B);

wherein the abundance ratio (R) of Zn and/or Mg in the disperse phase obtained by TEM-EDX is 0.0005 or more, and a requirement
15 of $R_d > R_m$ when $R_m = 0$ or $150R_m > R_d > R_m$ when $R_m \neq 0$ (wherein the abundance ratio (R) of Zn and/or Mg = (the number of L α -rays of Zn and/or Mg)/(the number of K α -rays of C), R_d represents R in the disperse phase, and R_m represents R in the continuous phase) is satisfied.

10086852.060302
20200901 25898001